

What is claimed is:

5 1 In an information distribution system providing content data and asset data to at least one subscriber, apparatus comprising:

a NULL packet inserter, for inserting NULL transport packets within a transport stream including content packets; and

a transport processor, for replacing at least some of said NULL packets with asset packets to produce a transport stream including content packets and asset packets.

10 2. The apparatus of claim 1, further comprising:

a first transport packetizer, for packetizing said asset data to produce said asset packets; and

15 a second transport packetizer, cooperating with said NULL packet inserter, for packetizing said content data and producing said transport stream including content packets.

20 3. The apparatus of claim 2, further comprising:

storage means, coupled to said transport processor, for storing said asset packets and said transport stream including content packets and NULL packets.

25 4. The apparatus of claim 1, further comprising:

storage means, coupled to said transport processor, for storing said asset packets and said transport stream including content packets and NULL packets.

30 5. The apparatus of claim 4, further comprising:

a session controller, for interacting with a subscriber to receive a content request;

said controller causing a transport stream including said requested content packets and NULL packets to be provided to said transport processor; and

said controller causing asset packets associated with said requested content to be provided to said transport processor.

5 6. The apparatus of claim 1, wherein said NULL packet inserter is responsive to a bandwidth reservation signal to adapt a number of NULL packets inserted into said transport stream including content packets.

10 7. The apparatus of claim 1, wherein said second transport packetizer provides mapping data indicative of the location of NULL packets within said transport stream including content packets and NULL packets.

15 8. The apparatus of claim 2, wherein:  
said transport processor is responsive to an asset rate control signal to adapt a utilization level of said NULL packets.

9. The apparatus of claim 2, wherein:  
said transport processor is responsive to an asset count signal to replace a plurality of NULL packets with each asset packet.

20 10. In an information distribution system providing content data and asset data to at least one subscriber, a method for processing content and asset information comprising the steps of:

25 inserting, within a transport stream including content packets, a plurality of NULL packets; and  
replacing at least some of said NULL packets with asset packets to produce a transport stream including content packets and asset packets.

30 11. The method of claim 10, wherein said asset packets have been processed according to the steps of:  
packetizing, using a transport packetizer, at least one information stream comprising an asset information stream, said asset information stream being associated with a content stream.

12. The method of claim 11, wherein said asset information stream comprises a plurality of asset information sub-streams.

5 13. The method of claim 10, wherein said plurality of NULL packets to be inserted into said transport stream including content packets is determined with respect to a bandwidth reservation signal.

10 14. The method of claim 10, further comprising the step of providing mapping data indicative of the location of NULL packets within said transport stream including content packets and NULL packets.

15 15. The method of claim 14, wherein said step of replacing comprises the steps of:

finding, using said mapping data, the location of a next NULL packet within said transport stream including content packets and NULL packets; determining, according to an asset injection rate, if said next NULL packet should be replaced by an asset packet; and

20 in the case of a determination that said next NULL packet should be replaced by an asset packet, replacing said next NULL packet with a next asset packet.

25 16. The method of claim 1, wherein said step of inserting said asset packets is repeated according to an asset injection count.

17. The method of claim 11, further comprising the steps of:  
interacting with a subscriber to receive a content request;  
retrieving a transport stream including said requested content packets and any inserted NULL packets;  
replacing at least some of said NULL packets with said asset packets;

30 and

transporting, to said requesting subscriber, a transport stream including said transport stream including said requested content and said inserted asset packets.